

SEQUENCE LISTING

- (1) GENERAL INFORMATION:
 - (i) APPLICANT:
 - (A) NAME: Rowett Research Services Limited
 - (B) STREET: Greenburn
 - (C) CITY: Buckburn ABERDEEN
 - (E) COUNTRY: United Kingdom
 - (F) POSTAL CODE (ZIP): AB21 95B
 - (ii) TITLE OF INVENTION: Chimeric binding peptide library screening method
 - (iii) NUMBER OF SEQUENCES: 76
 - (iv) COMPUTER READABLE FORM:
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (E20)
- (2) INFORMATION FOR SEQ ID NO: 1:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 38 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

TCAGGTCAGA GTGACCTGAG CTAAAATAAC ACATTCAG

- (2) INFORMATION FOR SEQ ID NO: 2:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 38 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO



(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:	
AGTCCAGTCT CACTGGACTC GATTTTATTG TGTAAGTC	38
(2) INFORMATION FOR SEQ ID NO: 3:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 521 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: double (D) TOPOLOGY: linear 	
(ii) MOLECULE TYPE: cDNA	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(ix) FEATURE: (A) NAME/KEY: CDS (B) LOCATION:41475	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:	
AAGCTTGCAT GCAAATTCTA TTTCAAGGAG ACAGTCATAA ATG AAA TAC CTA TTG Met Lys Tyr Leu Leu 1 5	
CCT ACG GCA GCC GCT GGA TTG TTA TTA CTC GCG GCC CAG CCG GCC ATG Pro Thr Ala Ala Ala Gly Leu Leu Leu Leu Ala Ala Gln Pro Ala Met 10 15 20	103
GCC CAA GTG CAG CTG CAG TAA TAG GCG GCC GCA GGG GGA GGA GGG TCC Ala Gln Val Gln Leu Gln * * Ala Ala Ala Gly Gly Gly Ser 25 30 35	151
ATG GAA TCT GCC AAG GAG ACT CGC TAC TGT GCA GTG TGC AAT GAC TAT Met Glu Ser Ala Lys Glu Thr Arg Tyr Cys Ala Val Cys Asn Asp Tyr 40 45 50	
GCT TCA GGC TAC CAT TAT GGA GTC TGG TCC TGT GAG GGC TGC AAG GCC Ala Ser Gly Tyr His Tyr Gly Val Trp Ser Cys Glu Gly Cys Lys Ala 55 60 65	247
TTC TTC AAG AGA AGT ATT CAA GGA CAT AAC GAC TAT ATG TGT CCA GCC Phe Phe Lys Arg Ser Ile Gln Gly His Asn Asp Tyr Met Cys Pro Ala 70 75 80 85	295
ACC AAC CAG TGC ACC ATT GAT AAA AAC AGG AGG AAG AGC TGC CAG GCC Thr Asn Gln Cys Thr Ile Asp Lys Asn Arg Arg Lys Ser Cys Gln Ala 90 95 100	343
TGC CGG CTC CGT AAA TGC TAC GAA GTG GGA ATG ATG AAA GGT GGG ATA Cys Arg Leu Arg Lys Cys Tyr Glu Val Gly Met Met Lys Gly Gly Ile 105	391
CGA AAA GAC CGA AGA GGA GGG AGA ATG TTG AAA CAC AAG CGC CAG AGA Arg Lys Asp Arg Gly Gly Arg Met Leu Lys His Lys Arg Gln Arg	439

120 125

130

GAT GAT GGG GAG GGC AGG GGT GAA GTG GGG TCT TGA TAATCAGGTC
Asp Asp Gly Glu Gly Arg Gly Glu Val Gly Ser *
135 140 145

495

AGAGTGACCT GAGCTAAAAT AACACATTCA GAATTC

521

- (2) INFORMATION FOR SEQ ID NO: 4:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 145 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

Met Lys Tyr Leu Leu Pro Thr Ala Ala Ala Gly Leu Leu Leu Leu Ala 1 5 10 15

Ala Gln Pro Ala Met Ala Gln Val Gln Leu Gln * Ala Ala Ala Ala 20 25 30

Gly Gly Gly Ser Met Glu Ser Ala Lys Glu Thr Arg Tyr Cys Ala 35 40 45

Val Cys Asn Asp Tyr Ala Ser Gly Tyr His Tyr Gly Val Trp Ser Cys
50 55 60

Glu Gly Cys Lys Ala Phe Phe Lys Arg Ser Ile Gln Gly His Asn Asp
65 70 75 80

Tyr Met Cys Pro Ala Thr Asn Gln Cys Thr Ile Asp Lys Asn Arg Arg 85 90 95

Lys Ser Cys Gln Ala Cys Arg Leu Arg Lys Cys Tyr Glu Val Gly Met 100 105 110

Met Lys Gly Gly Ile Arg Lys Asp Arg Arg Gly Gly Arg Met Leu Lys

His Lys Arg Gln Arg Asp Asp Gly Glu Gly Arg Gly Glu Val Gly Ser 130 135 140

- (2) INFORMATION FOR SEQ ID NO: 5:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 102 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO

4

- (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 1...102
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

AAA	CGA	ACT	GTG	GCT	ĢCA	CCA	TCT	GTC	TTC	ATC	TTC	CCG	CCA	TCT	GAT	48
Lys	Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	
				150					155					160	•	

GAG CAG TTG AAA TCT GGA ACT GCC TCT GTT GTG TGC CTG CTG AAT AAC
Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
165 170 175

TTC TAT
Phe Tyr

- (2) INFORMATION FOR SEQ ID NO: 6:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 34 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
1 5 10 15

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn 20 25 30

Phe Tyr

- (2) INFORMATION FOR SEQ ID NO: 7:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 150 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 1..150
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

5

	Ala							GGC Gly								49
AAA Lys	CGA Arg	ACT Thr	GTG Val	GCT Ala 55	GCA Ala	CCA Pro	TCT Ser	GTC Val	TTC Phe 60	ATC Ile	TTC Phe	CCG Pro	CCA Pro	TCT Ser 65	GAT Asp	96
GAG Glu	CAG Gln	TTG Leu	AAA Lys 70	TCT Ser	GGA Gly	ACT Thr	GCC Ala	TCT Ser 75	GTT Val	GTG Val	TGC Cys	CTG Leu	CTG Leu 80	AAT Asn	AAC Asn	144
TTC Phe																150

- (2) INFORMATION FOR SEQ ID NO: 8:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 50 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

Met Ala Gln Pro Thr Thr Arg Pro Gly Gln Gly Thr Arg Leu Asp Ile

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn

Phe Tyr 50

- (2) INFORMATION FOR SEQ ID NO: 9:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 150 base pairs(B) TYPE: nucleic acid

 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS (B) LOCATION: 1...150
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

								6								
ATG Met	GCC Ala	CAG Gln	TCC Ser	CAC His 55	CAC His	GCG Ala	TCC Ser	GGC Gly	GGA Gly 60	GGG Gly	ACC Thr	AAG Lys	GTG Val	GAG Glu 65	ATC Ile	48
aaa Lys	CGA Arg	ACT Thr	GTG Val 70	GCT Ala	GCA Ala	CCA Pro	TCT Ser	GTC Val 75	TTC Phe	ATC Ile	TTC Phe	CCG Pro	CCA Pro 80	TCT Ser	GAT Asp	96
GAG Glu	CAG Gln	TTG Leu 85	AAA Lys	TCT Ser	GGA Gly	ACT Thr	GCC Ala 90	TCT Ser	GTT Val	GTG Val	TGC Cys	CTG Leu 95	CTG Leu	AAT Asn	AAC Asn	144
TTC Phe																150

- (2) INFORMATION FOR SEQ ID NO: 10:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 50 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

Met Ala Gln Ser His His Ala Ser Gly Gly Gly Thr Lys Val Glu Ile
1 10 15

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp 20 25 30

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn 35 40 45

Phe Tyr 50

- (2) INFORMATION FOR SEQ ID NO: 11:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 566 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 41..475
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

AAGCTTGCAT GCAAATTCTA TTTCAAGGAG ACAGTCATAA ATG AAA TAC CTA TTG

							•	7			Met	Lys	Tyr	Leu	Leu 55		
CCT Pro	ACG Thr	GCA Ala	GCC Ala	GCT Ala 60	GGA Gly	TTG Leu	TTA Leu	TTA Leu	CTC Leu 65	GCG Ala	GCC Ala	CAG Gln	CCG Pro	GCC Ala 70	ATG Met		103
GCC Ala	GAG Glu	GTG Val	CAA Gln 75	CTG Leu	CAG Gln	TAA *	TAG *	GCG Ala 80	GCC Ala	GCA Ala	GGG Gly	GGA Gly	GGA Gly 85	GGG Gly	TCC Ser		151
ATG Met	GAA Glu	TCT Ser 90	GCC Ala	AAG Lys	GAG Glu	ACT Thr	CGC Arg 95	TAC Tyr	TGT Cys	GCA Ala	GTG Val	TGC Cys 100	AAT Asn	GAC Asp	TAT Tyr		199
GCT Ala	TCA Ser 105	GGC Gly	TAC Tyr	CAT His	TAT Tyr	GGA Gly 110	GTC Val	TGG Trp	TCC Ser	TGT Cys	GAG Glu 115	GGC Gly	TGC Cys	AAG Lys	GCC Ala		247
														CCA Pro			295
														CAG Gln 150			343
TGC Cys	CGG Arg	CTC Leu	CGT Arg 155	AAA Lys	TGC Cys	TAC Tyr	GAA Glu	GTG Val 160	GGA Gly	ATG Met	ATG Met	AAA Lys	GGT Gly 165	GGG Gly	ATA Ile		391
CGA Arg	AAA Lys	GAC Asp 170	CGA Arg	AGA Arg	GGA Gly	GGG Gly	AGA Arg 175	ATG Met	TTG Leu	AAA Lys	CAC His	AAG Lys 180	CGC Arg	CAG Gln	AGA Arg		439
				GGC Gly								TAAI	CAGO	TC			485
AGAG	TGAC	CT G	AGCT	'AAAA	T AA	CACA	TTCA	GGŢ	'CGAC	TTG	GGTC	AGTO	TG A	CCGG	GACA	A.	545
AGTT	AATG	TA A	CCTC	GAAT	T C					٠							566

(2) INFORMATION FOR SEQ ID NO: 12:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 145 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

Met Lys Tyr Leu Leu Pro Thr Ala Ala Gly Leu Leu Leu Leu Ala 1 5 10 15

Ala Gln Pro Ala Met Ala Glu Val Gln Leu Gln * * Ala Ala Ala 20 25 30

Gly Gly Gly Ser Met Glu Ser Ala Lys Glu Thr Arg Tyr Cys Ala 35 40 45

8

Val Cys Asn Asp Tyr Ala Ser Gly Tyr His Tyr Gly Val Trp Ser Cys Glu Gly Gly Cys Lys Ala Phe Phe Lys Arg Ser Ile Gln Gly His Asn Asp 80 Tyr Met Cys Pro Ala Thr Asn Gln Cys Thr 90 Ile Asp Lys Asn Arg Arg Lys Ser Cys Gln Ala Cys Arg Leu Arg Lys Cys Tyr Glu Val Gly Met 110 Met Lys Gly Gly Gly Ile Arg Lys Asp Asp Asp Arg Gly Gly Gly Arg Met Leu Lys 135 Arg Gly Arg Gly Gly Gly Gly Gly Ser Ser Ils Gly Ser

- (2) INFORMATION FOR SEQ ID NO: 13:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 539 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 41..481
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

	1	,	2														
AAG	CTTG	CAT (CAA	ATTC:	ra Ti	rtcaj	AGGA	G AC	AGTC:	ATAA	ATG Met	AAA Lys	TAC Tyr	CTA Leu	TTG Leu 150	5	5
CCT Pro	ACG Thr	GCA Ala	GCC Ala	GCT Ala 155	GGA Gly	TTG Leu	TTA Leu	TTA Leu	CTC Leu 160	GCG Ala	GCC Ala	CAG Gln	CCG ?:0	GCA Ala 165	ATG Met	10	3
GCC Ala	GAG Glu	ATG Met	GAA Glu 170	TCT Ser	GCC Ala	AAG Lys	GAG Glu	ACT Thr 175	CGC Arg	TAC Tyr	TGT Cys	GCA Ala	GTG Val 130	TGC Cys	AAT Asn	15	1
GAC Asp	TAT Tyr	GCT Ala 185	TCA Ser	GGC Gly	TAC Tyr	CAT His	TAT Tyr 190	GGA Gly	GTC Val	TGG Trp	TCC Ser	TGT Cys 195	GAG Glu	GGC Gly	TGC Cys	19	9
AAG Lys	GCC Ala	TTC Phe	TTC Phe	AAG Lys	AGA Arg	AGT Ser	ATT Ile	CAA Gln	GGA Gly	CAT His	AAC Asn	GAC Asp	TAT Tyz	ATG Met	TGT Cys	24	7

								9									
	200)				205					210						
CC2 Pro 215	Ala	ACC Thr	: AAC : Asn	CAG Gln	TGC Cys 220	Thr	ATT Ile	GAT Asp	AAA Lys	AAC Asn 225	Arg	AGG Arg	AAG Lys	AGC Ser	TGC Cys 230	3	295
CAG Gln	GCC Ala	TGC Cys	CGG Arg	CTC Leu 235	Arg	AAA Lys	TGC Cys	TAC Tyr	GAA Glu 240	GTG Val	GGA Gly	ATG Met	ATG Met	AAA Lys 245	GGT Gly	3	343
GGG	ATA Ile	CGA Arg	AAA Lys 250	Asp	CGA Arg	AGA Arg	GGA Gly	GGG Gly 255	AGA Arg	ATG Met	TTG Leu	AAA Lys	CAC His 260	AAG Lys	CGC Arg	;	391
CAG Gln	AGA Arg	GAT Asp 265	_	GGG Gly	GAG Glu	GGC Gly	AGG Arg 270	GGT Gly	GAA Glu	GTG Val	GGG	TCT Ser 275	GGG Gly	GGA Gly	GGA Gly	-	439
GG G Gly	TCG Ser 280	Ala	CAG Gln	CCG Pro	GCC Ala	CTC Leu 285	CTG Leu	CAG Gln	CTG Leu	GCG Ala	GCC Ala 290	GCA Ala	TAA			4	481
CTG	ATTG	AGT	CGAC	TTGG	GT C	agtc'	TGAC	C GG	GACA	aagt	TAA'	TGTA	ACC '	TCGA	ATTC	9	539
	TME	ODMA	TION	EO B	SEO	ו חד	MO.	14.									
(2)	TNE		SEQUI						•								
		(,	A) L: B) T: D) T(ENGT:	H: 1	47 ar	mino cid				•						
	(ii (xi) MO	LECU!	LE T	YPE: ESCR	prot PTIC	cein ON: S	SEQ :	ID NO): 1·	1:						
Met 1	Lys	Tyr	Leu	Leu 5	Pro	Thr	Ala	Ala	Ala 10	Gly	Leu	Leu	Leu	Leu 15	Ala		
Ala	Gln	Pro	Ala 20	Met	Ala	Glu	Met	Glu 25	Ser	Ala	Lys	Glu	Thr 30	Arg	Tyr		
Cys	Ala	Val 35	Cys	Asn	Asp	Tyr	Ala 40	Ser	Gly	Tyr	His	Tyr 45	Gly	Val	Trp		
Ser	Cys 50	Glu	Gly	Cys	Lys	Ala 55	Phe	Phe	Lys	Arg	Ser 60	Ile	Gln	Gly	His		
Asn 65	Asp	Tyr	Met	Cys	Pro 70	Ala	Thr	Asn	Gln	Cys 75	Thr	Ile	Asp	Lys	Asn 80		
Arg	Arg	Lys	Ser	Cys 85	Gln	Ala	Cys	Arg	Leu 90	Arg	Lys	Cys	Tyr	Glu 95	Val		
Gly	Met	Met	Lys 100	Gly	Gly	Ile	Arg	Lys 105	Asp	Arg	Arg	Gly	Gly 110	Arg	Met		
Leu	Lys	His 115	Lys	Arg	Gln	Arg	Asp 120	Asp	Gly	Glu	Gly	Arg 125	Gly	Glu	Val		
Gly	Ser 130	Gly	Gly	Gly	Gly	Ser 135	Ala	Gln	Pro	Ala	Leu 140	Leu	Gln	Leu	Ala		

10

Ala Ala 145

(2) INFORMATION FOR SEQ ID NO: 15:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 372 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (ix) FEATURE:
 - (A) NAME/KEY: CDS (B) LOCATION: 1...372
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

CAG Gln	GTA Val	CAG Gln 150	CTG Leu	CAG Gln	CAG Gln	TCA Ser	GGG Gly 155	GGA Gly	GGC Gly	GTG Val	GTC Val	CAG Gln 160	520	GGG Gly	AGG Arg	43
TCC Ser	CTG Leu 165	AGA Arg	CTC Leu	TCC Ser	TGT Cys	GCA Ala 170	GCC Ala	TCG Ser	GGA Gly	TTC Phe	CCC Pro 175	TTT Phe	AGT Ser	ACT Thr	TAT Tyr	96
GGC Gly 180	ATG Met	CAC His	TGG Trp	CGC Arg	CAG Gln 185	GCT Ala	GTC Val	CCA Pro	GGC Gly	AAG Lys 190	GGG Gly	CTG Leu	GAG Glu	TGG Trp	GTG Val 195	144
GCA Ala	GTT Val	ATA Ile	TCA Ser	TAT Tyr 200	GAT Asp	GGA Gly	AGT Ser	AAT Asn	AAA Lys 205	TAC Tyr	TAC Tyr	GCA Ala	GAC Asp	TCC Ser 210	GTG Val	192
AAG Lys	GGC Gly	CGA Arg	TTC Phe 215	ACC Thr	ATC Ile	TCC Ser	AGA Arg	GAC Asp 220	AAT Asn	TCC Ser	AAG Lys	AAC Asn	ACG Thr 225	TTG Leu	TAT Tyr	240
CTG Leu	CAA Gln	ATG Met 230	AAC Asn	AGC Ser	CTG Leu	AGA Arg	GCT Ala 235	GAG Glu	GAC Asp	ACG Thr	GCT Ala	GTG Val 240	TAT Tyr	TAC Tyr	TGT Cys	288
GCG Ala	AGA Arg 245	GAT Asp	TTA Leu	GAC Asp	Pro	ACC Thr 250	Arg	TAT Tyr	AGC Ser	Ser	GGC Gly 255	TGG Trp	GAC Asp	ACT Th:	GAC Asp	. 336
TAC Tyr 260	TGG Trp	GGC Gly	CAG Gln	Gly	CAC His 265	CTG Leu	GTC Val	ACT Thr	Val	TCC Ser 270	TCA Ser				-	372

(2) INFORMATION FOR SEQ ID NO: 16:

(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 124 amino acids

11

- (B) TYPE: amino acid
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

Gln Val Gln Leu Gln Gln Ser Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Pro Phe Ser Thr Tyr 20 25 30

Gly Met His Trp Arg Gln Ala Val Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val 50 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys 85 90 95

Ala Arg Asp Leu Asp Pro Thr Arg Tyr Ser Ser Gly Trp Asp Thr Asp 100 105 110

Tyr Trp Gly Gln Gly His Leu Val Thr Val Ser Ser 115 120

- (2) INFORMATION FOR SEQ ID NO: 17:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 327 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS
 (B) LOCATION:1..327
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

							-									_
CAR	N.C.C	מסמ	CTC	ACG	CAG	$T \subset T$	CCA	GGC	ACC	CTG	TCT	TTG	TCT	CCG	GGG	48
~ 1	 1	CT 1	*	ml -	~1-	C	D =0	C1	The	TAIL	Sar	LOU	500	Dro.	Gly	
GLU	Thr	Thr	Leu	THE	GTH	Ser	ETO	GTA	1111	Deu	Jer	neu	3=1	F + O	GLY	
								_		135					140	
125					130					133					TAO	

GAA AGA GCC ACC CTC TCC TGC AGG GCC AGT CAG AAT ATT GGC AGC AGC
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Asn Ile Gly Ser Ser
145 150 155

TCC TTA GCC TGG TAC CAA CAG AAA CCT GGC CAG GCT CCC AGG CTC CTC
Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu

12

170 160 165 ATC TAT GGT GCA TCC ACC AGG GCC ACT GGT ATC CCA GCC AGG TTC AGT 192 Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser 180 185 175 GGC AGT GGG TCA GGG ACA CAA TTC ACT CTC ACC ATC AGC AGC CTG CAG 240 Gly Ser Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Ser Ser Leu Gln 190 TCT GAA GAT TTT GCA GTT TAT TAC TGT CAG CAG TAT AAT TTC TGG CCA 288 Ser Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Asn Phe Trp Pro 210 215 205 327 TTC ACT TTT GGC CCT GGG ACC AAG CTG GAG ATC AAA CGT

- (2) INFORMATION FOR SEQ ID NO: 18:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 109 amino acids

Phe Thr Phe Gly Pro Gly Thr Lys Leu Glu Ile Lys Arg

- (B) TYPE: amino acid
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

Glu Thr Thr Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Asn Ile Gly Ser Ser 20 25 30

Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu 35 40 45

Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser
50 60

Gly Ser Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Ser Ser Leu Gln 65 70 75 80

Ser Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Asn Phe Trp Pro 85 90 95

Phe Thr Phe Gly Pro Gly Thr Lys Leu Glu Ile Lys Arg
100 105

- (2) INFORMATION FOR SEQ ID NO: 19:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 72 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

 - (iii) HYPOTHETICAL: NO

13

(i	v)	ANT	-SE	NSE	: NO
----	----	-----	-----	-----	------

•	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:	
TTTTCTGCAG TAATAGGCGG CCGCAGGGGG AGGAGGGTCC ATCGAAGGTC GCGAAGCAGA	60
GACTGTTGAA AG	72
(2) INFORMATION FOR SEQ ID NO: 20:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 75 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:	
TTTTGAATTC TTATTAACCA CCGAACTGCG GGTGACGCCA AGCGCTTGCG GCCGTTAAGA	60
CTCCTTATTA CGCAG	75
(2) INFORMATION FOR SEQ ID NO: 21:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 32 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:	
AAAAGCGGCC GCACTGGCCT GAGAGANNNN NN	32
(2) INFORMATION FOR SEQ ID NO: 22:	

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 16 base pairs

- (B) TYPE: nucleic acid(C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "synthetic DNA"
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

TCGACCCACG CGTCCG

16

- (2) INFORMATION FOR SEQ ID NO: 23:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 12 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

GGGTGCCGAG GC

12

- (2) INFORMATION FOR SEQ ID NO: 24:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 72 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

AAAAGAATTC TGAATGTGTT ATTTTAGCTC AGGTCACTCT GACCTGATTA TCAAGACCCC

ACTTCACCCC CT	72
(2) INFORMATION FOR SEQ ID NO: 25:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 46 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:	
AAAAGCGGCC GCAGGGGGAG GAGGGTCCAT GGAATCTGCC AAGGAG	46
(2) INFORMATION FOR SEQ ID NO: 26:	
(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 17 base pairs(B) TYPE: nucleic acid(C) STRANDEDNESS: single(D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:	
GTAAAACGAC GGCCAGT	 17
(2) INFORMATION FOR SEQ ID NO: 27:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 20 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:	
GGATAACAAT TTCACACAGG	20
(2) INFORMATION FOR SEQ ID NO: 28:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 25 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:	
AAAGCGGCCG CACTGGCCTG AGAGA	25
(2) INFORMATION FOR SEQ ID NO: 29:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:	
AAAAGGCCCA GCCGGCCATG GCCCAGCCCA CCACGCGTCC G	41
(2) INFORMATION FOR SEQ ID NO: 30:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 42 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYDOTHETTCAL. NO	

(iv) A	ITN	-SEN	SE:	NO
--------	-----	------	-----	----

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:	
AAAAGGCCCA GCCGGCCATG GCCCAGTCCC ACCACGCGTC CG	43
(2) INFORMATION FOR SEQ ID NO: 31:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 43 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: MO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:	
AAAAGGCCCA GCCGGCCATG GCCCAGTACC CACCACGCGT CCG	4 3
(2) INFORMATION FOR SEQ ID NO: 32:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 72 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:	-
AAAAGAATTC GAGGTTACAT TAACTTTGTT CCGGTCAGAC TGACCCAAGT CGACCTGAAT	60
GTGTTATTTT AG	72
(2) INFORMATION FOR SEQ ID NO: 33:	
(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 32 base pairs(B) TYPE: nucleic acid(C) STRANDEDNESS: single	

(D) TOPOLOGY: linear

<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:	
CCTTGGCAGA TTCCATCTCG GCCATTGCCG GC	32
(2) INFORMATION FOR SEQ ID NO: 34:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 31 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
	·
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:	
CCGGCAATGG CCGAGATGGA ATCTGCCAAG G	31
(2) INFORMATION FOR SEQ ID NO: 35:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 86 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:	
TTTTGTCGAC TCAATCAGTT ATGCGGCCGC CAGCTGCAGG AGGGCCGGCT GGGCCGACC	C 60
TCCTCCCCCA GACCCCACTT CACCCC	86

- (2) INFORMATION FOR SEQ ID NO: 36:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

TGTTGAAACA CAAGCGCCAG

20

- (2) INFORMATION FOR SEQ ID NO: 37:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 24 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

TGGAAGAGGC ACGTTCTTTT CTTT

- (2) INFORMATION FOR SEQ ID NO: 39:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 24 base pairs(B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

and that that and that the feet for

20	
CTCCTTCTTA CTCTTGCTGG CGGT	2 4
(2) INFORMATION FOR SEQ ID NO: 39:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 24 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
TO TO NO. 20.	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:	24
AGACTCTCCC CTGTTGAAGC TCTT	. 24
(2) INFORMATION FOR SEQ ID NO: 40:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 27 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:	
TGAAGATTCT GTAGGGGCCA CTGTCTT	27
(2) INFORMATION FOR SEQ ID NO: 41:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	

(iv) ANTI-SENSE: NO

(xi) S	SEQUENCE DESCRIPTION: SEQ ID NO: 41:	
TGAACCGCCT	CCACCTGAGG AGACGGTGAC CAGGGTGCC	39
(2) INFORM	ATION FOR SEQ ID NO: 42:	
(i) S	EQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii) M	OOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii) H	YPOTHETICAL: NO	
(iv) A	NTI-SENSE: NO	
(xi) S	SEQUENCE DESCRIPTION: SEQ ID NO: 42:	
TGAACCGCCT	CCACCTGAAG AGACGGTGAC CATTGTCCC	39
(2) INFORM	MATION FOR SEQ ID NO: 43:	
	EQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii) M	OLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii) H	YPOTHETICAL: NO	
(iv) A	NTI-SENSE: NO	
(t) C	EQUENCE DESCRIPTION: SEQ ID NO: 43:	
	CCACCTGAGG AGACGGTGAC CAGGGTTCC	39
	ATION FOR SEQ ID NO: 44:	
·	EQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii) M	OLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	

	12221	22 HYPOTHETICAL: NO	
	(iv)	ANTI-SENSE: NO	
	(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 44:	
TGA	ACCGC	CT CCACCTGAGG AGACGGTGAC CGTGGTCCC	3
(2)	INFO	RMATION FOR SEQ ID NO: 45:	
	(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
	(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
	(iii)	HYPOTHETICAL: NO	
	(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 45:	
ጥጥጥ	• •	CC AGCCGGCCAT GGCCCAGGTG CAGCTGGTGC AGTCTGG	4
		RMATION FOR SEQ ID NO: 46:	
(2)		SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
	(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
((iii)	HYPOTHETICAL: NO	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	SEQUENCE DESCRIPTION: SEQ ID NO: 46:	
TTTT	TGGCC	C AGCCGGCCAT GGCCCAGGTC AACTTAAGGG AGTCTGG	47
(2)	INFOF	RMATION FOR SEQ ID NO: 47:	
	(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	

47

47

(111) HYPOTHETICAL: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:
TTTTTGGCCC AGCCGGCCAT GGCCGAGGTG CAGCTGGTGG AGTCTGG
(2) INFORMATION FOR SEQ ID NO: 48:
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>
(iii) HYPOTHETICAL: NO
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:
TTTTTGGCCC AGCCGGCCAT GGCCCAGGTG CAGCTGCAGG AGTCGGG
(2) INFORMATION FOR SEQ ID NO: 49:
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>
(iii) HYPOTHETICAL: NO
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:
TTTTGGCCC AGCCGGCCAT GGCCGAGGTG CAGCTGTTGC AGTCTGC

(2) INFORMATION FOR SEQ ID NO: 50:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 47 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"
- (iii) HYPOTHETICAL: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:	
TTTTTGGCCC AGCCGGCCAT GGCCCAGGTA CAGCTGCAGC AGTCAGG	4
(2) INFORMATION FOR SEQ ID NO: 51:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:	
TTATTCGCGG CCGCCTAAAC AGAGGCAGTT CCAGATTTC	39
(2) INFORMATION FOR SEQ ID NO: 52:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:	
STCACTTGCG GCCGCCTACA GTGTGGCCTT GTTGGCTTG	39
(2) INFORMATION FOR SEQ ID NO: 53:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	

(iv)	ANTI-	SENSE:	NO

(xi)) SEQUENCE DESCRIPTION: SEQ ID NO: 53:	
TCTGGCG	GTG GCGGATCGGA CATCCAGATG ACCCAGTCTC C	4
(2) INFO	ORMATION FOR SEQ ID NO: 54:	
(i)) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(11)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii)	HYPOTHETICAL: NO	
(iv)	ANTI-SENSE: NO	
	SEQUENCE DESCRIPTION: SEQ ID NO: 54:	
rctggcgg	TG GCGGATCGGA TGTTGTGATG ACTCAGTCTC C	41
(2) INFO	RMATION FOR SEQ ID NO: 55:	
(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii)	HYPOTHETICAL: NO	
(iv)	ANTI-SENSE: NO	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 55:	
CTGGCGG1	IG GCGGATCGGA AATTGTGTTG ACGCAGTCTC C	41
	·	

- (2) INFORMATION FOR SEQ ID NO: 56:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 41 base pairs
 - (B) TYPE: nucleic acid

 - (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid

26	
(A) DESCRIPTION: /desc = "synthetic DNA"	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:	
TCTGGCGGTG GCGGATCGGA CATCGTGATG ACCCAGTCTC C	41
(2) INFORMATION FOR SEQ ID NO: 57:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	•
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:	
TCTGGCGGTG GCGGATCGGA AACGACACTC ACGCAGTCTC C	41
(2) INFORMATION FOR SEQ ID NO: 58:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:	
TCTGGCGGTG GCGGATCGGA AATTGTGCTG ACTCAGTCTC C	41
(2) INFORMATION FOR SEQ ID NO: 59:	

SUBSTITUTE SHEET (RULE 26)

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 42 base pairs(B) TYPE: nucleic acid

(C)	STRANDEDNESS:	single
-----	---------------	--------

- (D) TOPOLOGY: linear

- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:

TTCTCGTGCG GCCGCCTAAC GTTTGATTTC CACCTTGGTC CC

42

- (2) INFORMATION FOR SEQ ID NO: 60:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

TTCTCGTGCG GCCGCCTAAC GTTTGATCTC CAGCTTGGTC CC

42

- (2) INFORMATION FOR SEQ ID NO: 61:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

TTCTCGTGCG GCCGCCTAAC GTTTGATATC CACTTTGGTC CC

42

(2) INFORMATION FOR SEQ ID NO: 62:

42



28

	20
(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 42 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"
(iii)	HYPOTHETICAL: NO
(iv)	ANTI-SENSE: NO
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 62:
TTCTCGTG	CG GCCGCCTAAC GTTTGATCTC CACCTTGGTC CC
(2) INFO	RMATION FOR SEQ ID NO: 63:
(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 42 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"
(iii)	HYPOTHETICAL: NO
(iv)	ANTI-SENSE: NO
(vi)	SEQUENCE DESCRIPTION: SEQ ID NO: 63:
TTCTCGTGC	G GCCGCCTAAC GTTTAATCTC CAGTCGTGTC CC
(2) INFOR	MATION FOR SEQ ID NO: 64:
(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

TCTGGCGGTG GCGGATCGCA GTCTGTGTTG ACGCAGCCGC C

- (2) INFORMATION FOR SEQ ID NO: 65:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 41 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:

TCTGGCGGTG GCGGATCGCA GTCTGCCCTG ACTCAGCCTG C

- (2) INFORMATION FOR SEQ ID NO: 66:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 41 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthesis DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:

TCTGGCGGTG GCGGATCGTC CTATGTGCTG ACTCAGCCAC C

- (2) INFORMATION FOR SEQ ID NO: 67:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 41 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthesis DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:	
TCTGGCGGTG GCGGATCGTC TTCTGAGCTG ACTCAGGACC C	41
(2) INFORMATION FOR SEQ ID NO: 68:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	٠
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthesis DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68:	
	41
TCTGGCGGTG GCGGATCGCA CGTTATACTG ACTCAACCGC C	41
(2) INFORMATION FOR SEQ ID NO: 69:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthesis DNA"	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69:	
TCTGGCGGTG GCGGATCGCA GGCTGTGCTC ACTCAGCCGT C	41
(2) INFORMATION FOR SEQ ID NO: 70:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthesis DNA"</pre>	

12221	HYPOTHETICAL:	NIO
(111)	nifoineii.	NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70:

TCTGGCGGTG GCGGATCGAA TTTTATGCTG ACTCAGCCCC A

41

(2) INFORMATION FOR SEQ ID NO: 71:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:

TTCTCGTGCG GCCGCCTAAC CTAGGACGGT GACCTTGGTC CC

42

(2) INFORMATION FOR SEQ ID NO: 72:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:

TTCTCGTGCG GCCGCCTAAC CTAGGACGGT CAGCTTGGTC CC

42

(2) INFORMATION FOR SEQ ID NO: 73:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

32	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:	
TTCTCGTGCG GCCGCCTAAC CTAAAACGGT GAGCTGGGTC CC	42
(2) INFORMATION FOR SEQ ID NO: 74:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 18 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:	
CGATCCGCCA CCGCCAGA	18
(2) INFORMATION FOR SEQ ID NO: 75:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 18 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:	
GTCTCCTCAG GTGGAGGC	18
(2) INFORMATION FOR SEQ ID NO: 76:	

(i) SEQUENCE CHARACTERISTICS:





- (A) LENGTH: 54 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "synthetic DNA"

- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76:
 CGATCCGCCA CCGCCAGAGC CACCTCCGCC TGAACCGCCT CCACCTGAGG AGAC